

THE CLAIMS

1. (Cancelled)

2. (Currently Amended) An image display apparatus, in which one TV field period is divided into a plurality of sub-fields that are each given a different luminance weight and are arranged in ascending or descending order of luminance weight, when  $S$  denotes a sum of luminance weights of the plurality of sub-fields and  $R$  is within a range from 0 to  $S$ , a gray level corresponding to  $R$  is expressed by selecting sub-fields whose luminance weights, when added together, are closest to  $R$ , characterized in that

when the plurality of sub-fields are arranged in ascending order of luminance weight with a luminance weight of an " $i$ "th sub-field being denoted by  $W_i$ , " $n$ " exists such that  $W_1 + W_2 + \dots + W_i + \dots + W_n < W_{n+1}$ , where  $1 \leq n$  and  $n+1 \leq$  the number of the plurality of sub-fields.

3. (Cancelled)

4. (Previously Presented) An image display apparatus, in which one TV field period is divided into a plurality of sub-fields that are each given a luminance weight and are arranged in order of time, and a gray-scale image for the TV field period is displayed by choosing one of a plurality of coding patterns which are each made up of a combination of sub-fields having predetermined luminance weights in accordance with a maximum gray level of an input image signal and illuminating each pixel during desired sub-fields using the chosen coding pattern, where maximum display luminance is controlled according to a characteristic of the input image signal, characterized in that

when a ratio of a sum of luminance weights of all sub-fields in a first coding pattern to a sum of luminance weights of all sub-fields in a second coding pattern is denoted by  $K$ , where the first and second coding patterns are included in the plurality of coding patterns and the sub-fields in the first coding pattern are in a one-to-one correspondence with the sub-fields in the second coding pattern in order of luminance weight, the sub-fields in the first coding pattern include:

- (a) a sub-field having a luminance weight whose ratio to a luminance weight of a corresponding sub-field in the second coding pattern is less than or equal to a value  $K$ , and
- (b) a sub-field having a luminance weight whose ratio to a luminance weight of a corresponding sub-fields in the second coding pattern is greater than the value  $K$ .

5.- 45. (Cancelled)

46. (Previously Presented) The image display apparatus of Claim 4, wherein in each of at least two coding patterns among the plurality of coding patterns, at least two sets of three luminance weights selected in ascending order of luminance weight each meet the condition that the three luminance weights have a proportion selected from a plurality of proportions that are "1:2:3", "1:2:4", "1:2:5", "1:2:6", "1:3:7", "1:4:9", "2:6:12", and "2:6:16".

47. (Previously Presented) The image display apparatus of Claim 4, wherein ratios in luminance weight of the sub-fields in the first coding pattern to the corresponding sub-fields in the second coding pattern monotonously increase in ascending order of luminance weight.

48. (Previously Presented) The image display apparatus of Claim 47,  
wherein the ratios increase in arithmetic progression in ascending order of  
luminance weight.
49. (Previously Presented) The image display apparatus of Claim 47,  
wherein the ratios increase in geometric progression in ascending order of  
luminance weight.
50. (Previously Presented) The image display apparatus of Claim 47,  
wherein the sub-field with the ratio no greater than K includes a sub-field having  
a fixed smallest luminance weight.
51. (Previously Presented) The image display apparatus of Claim 50,  
wherein in each of at least two coding patterns among the plurality of coding  
patterns, at least two sets of three luminance weights selected in ascending order of luminance  
weight each meet the condition that the three luminance weights have a proportion selected from  
a plurality of proportions that are "1:2:3", "1:2:4", "1:2:5", "1:2:6", "1:3:7", "1:4:9", "2:6:12",  
and "2:6:16".
52. (Previously Presented) The image display apparatus of Claim 51,  
wherein when S denotes a sum of luminance weights of the plurality of sub-fields  
and R is within a range from 0 to S, a gray level corresponding to R is expressed by selecting  
sub-fields whose luminance weights, when added together, are closest to R.

53. (Previously Presented) The image display apparatus of Claim 52,  
wherein the selection of the sub-fields is controlled in accordance with one out of:  
an amount of movement from an image of a past TV field period to the image of the TV field  
period; and an approximate value of the amount of movement.

54. (Previously Presented) The image display apparatus of Claim 53,  
wherein in an image area where the amount of movement or the approximate value of the  
amount of movement is larger than a predetermined level, such combinations of sub-fields are  
chosen that monotonously increase in time with increasing gray levels of the input image signal.

55. (Previously Presented) A method for representing display field information  
comprising:

dividing one TV field period into a plurality of sub-fields that are each given a luminance  
weight and are arranged in order of time;

displaying a gray-scale image for the TV field period by choosing one of a plurality of  
coding patterns which are each made up of a combination of sub-fields having predetermined  
luminance weights in accordance with a maximum gray level of an input image signal;

illuminating each pixel during desired sub-fields using the chosen coding pattern, where  
maximum display luminance is controlled according to a characteristic of the input image signal,  
characterized in that

when a ratio of a sum of luminance weights of all sub-fields in a first coding  
pattern to a sum of luminance weights of all sub-fields in a second coding pattern is denoted by  
K, where the first and second coding patterns are included in the plurality of coding patterns and  
the sub-fields in the first coding pattern are in a one-to-one correspondence with the sub-fields in

the second coding pattern in order of luminance weight, the sub-fields in the first coding pattern include:

- (a) a sub-field having a luminance weight whose ratio to a luminance weight of a corresponding sub-field in the second coding pattern is less than or equal to a value  $K$ , and
- (b) a sub-field having a luminance weight whose ratio to a luminance weight of a corresponding sub-fields in the second coding pattern is greater than the value  $K$ .

56. (New) The image apparatus of claim 2, wherein the luminance weights of the plurality of sub-fields are dynamically adjusted to increase the ratio between the minimum to maximum luminance reproducible on the image apparatus when the gray level is relatively high, and

decrease the ratio between the minimum to maximum luminance reproducible on the image apparatus when the gray level is relatively low.

57. (New) The image display apparatus of claim 4 wherein the apparatus dynamically selects the first coding pattern if the dynamic range of the display luminance of the input image signal is relatively narrow, and selects the second coding pattern if the dynamic range of the display luminance of the input image signal is relatively high.

58. (New) The method of claim 55 further comprising:  
  
dynamically selecting the first coding pattern if the dynamic range of the display luminance of the input image signal is relatively narrow, and  
  
dynamically selecting the second coding pattern if the dynamic range of the display luminance of the input image signal is relatively high.

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